
THE RELATIONSHIP BETWEEN KNOWLEDGE AND BREAST SELF-EXAMINATION BEHAVIOR (BSE) IN ADOLESCENT FEMALES

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ABSTRACT

Background: The incidence of cancer continues to increase, and at this time, breast cancer is in first place in terms of the number of cancers in Indonesia and is one of the contributors to cancer deaths. Breast self-examination (BSE) is one way to detect breast cancer early. This study aims to determine the relationship between knowledge and breast self-examination behavior in adolescent females at SMK Kesehatan Amanah Husada Yogyakarta.

Methods: This study used a quantitative, correlational, *cross-sectional* design. The population of all female students in grades X, XI, and XII of SMK Kesehatan Amanah Husada Yogyakarta for the 2024/2025 school year is 115, and 54 are sampled. Determine the sample for each class using proportionate stratified random sampling and *simple random sampling*. Data collection was conducted using a questionnaire on breast self-examination knowledge and behavior, which was then analyzed using the chi-square test.

Results: Respondents with good knowledge of breast self-examination were 32 (59.3%), enough knowledge as much as 10 (18.5%), and less knowledge as much as 12 (22.2%). In addition, respondents who did not perform breast self-examination behavior were 35 (64.8%), and those who performed were 19 (35.2%). The results of the chi-square test showed a significance value of $p < 0.001$ instead of $p = 0.000$.

Conclusion: There is a relationship between knowledge and breast self-examination behavior in adolescent females at SMK Kesehatan Amanah Husada Yogyakarta.

Keywords: behavior, breast self-examination, knowledge

INTRODUCTION

Breast cancer is a type of cancer that develops in the breast tissue. According to data from the *International Agency for Research on Cancer* (IARC), breast cancer became the most commonly diagnosed type of cancer in the world in 2020. There were more than 2.26 million new cases of breast cancer and nearly 685,000 deaths from breast cancer worldwide in 2020. Breast cancer is the most common cause of cancer death in women and the fifth most common cause of cancer death overall. By 2040, it is estimated that the incidence of breast cancer will increase by more than 3 million new cases per year, and the death rate due to breast cancer will increase by more than half, to more than 1 million deaths per year (International Agency for Research on Cancer, 2021).

The incidence of cancer continues to increase, and at this time, breast cancer is in first place in terms of the number of cancers in Indonesia and is one of the contributors to cancer deaths. Based on data from the Ministry of Health of the Republic of Indonesia in 2020, the number of new cases of breast cancer reached 68,858 cases (16.6%) out of a total of 396,914 new cases of cancer in Indonesia, with the number of deaths reaching more than 22 thousand cases (Kemenkes RI, 2022). Meanwhile, the Yogyakarta Special Region

Health Office (DIY) recorded that breast cancer is the highest case among other cancer cases in Yogyakarta. Based on data collected from districts/cities in Yogyakarta in 2023, 1690 cases of breast cancer were found (Herlambang, 2024).

Breast Self-examination (BSE) is an integral part of every woman's breast examination. Breast self-examination is done once a month and can be an effective screening instrument to find breast lesions. The benefits of being aware of detecting abnormalities in the breast as early as possible are that breast cancer can, in essence, be detected early by adolescent women. Every woman has a different breast shape and size. If a woman checks her own breasts regularly every month after menstruation, she can feel how normal women's breasts are. If there is a change, of course, women can find out easily (Efni & Fatmawati, 2021). Breast self-examination can be started as soon as the woman has entered puberty. This examination is more effective in women of young age and reproductive age, 15-49 years (Siregar, 2021).

A person's health behavior is determined by knowledge, attitudes, beliefs, and traditions, meaning that knowledge greatly influences behavior. With knowledge about breast self-examination (BSE), a person's motivation to perform early breast cancer detection will naturally increase. On the other hand, if a person does not know about BSE, it is clear that they will not do early detection of breast cancer by doing BSE (Tae & Melina, 2020). This knowledge is very necessary considering that the breast is one of the reproductive organs whose changes can be seen clearly, and it has a fairly important function (Daryati et al., 2023).

The results of a preliminary study conducted at SMK Kesehatan Amanah Husada Yogyakarta through interviews with 14 female students, found that six students understood about being breast self-examination (BSE), eight students had heard about being BSE but had not understood it correctly, two students had done BSE regularly, four students were BSE but not routinely, and eight students had never been BSE. This shows that female students' awareness is still low.

Based on the above background, the author is interested in conducting research on "The relationship between knowledge and breast self-examination behavior in adolescent females at SMK Kesehatan Amanah Husada Yogyakarta".

RESEARCH METHOD

This study uses a quantitative method with a descriptive correlation design and a cross-sectional design. The population of all female students in grades X, XI, and XII of SMK Kesehatan Amanah Husada Yogyakarta for the 2024/2025 school year totaled 115, and 54 were sampled. The inclusion criteria for this study were female students of SMK Kesehatan Amanah Husada Yogyakarta who had menstruated, were willing to be respondents, and were present at the time of the study. The exclusion criteria were female students who had not menstruated, were unwilling to be respondents, or were not present at the time of the study. The sample for each class is determined by proportionate stratified random sampling, and the sampling within each class is by simple random sampling. The research was conducted from November 2024 to February 2025. Data collection using a questionnaire of breast self-examination knowledge and breast self-examination behavior. Data analysis used chi square test. The ethical feasibility test has been conducted at the KEPK of Kusuma Husada University, Surakarta, under certificate No. 2646/UKH.L.02/EC/II/2025.

RESULTS

The results of the study are presented in univariate and bivariate forms. Univariate data is used to summarize the distribution of knowledge and behavior regarding breast self-

examination. Meanwhile, bivariate data is used to show the relationship between the two variables.

Table 1. Distribution of Frequency of Knowledge and Breast Self-Examination Behavior

Variable	Frequency (n)	Percentage (%)
Knowledge		
Less	12	22.2
Enough	10	18.5
Good	32	59.3
Behavior		
Not Performed	35	64.8
Performed	19	35.2
Total	54	100.0

Based on table 1, it shows that most of the respondents have good knowledge about breast self-examination (BSE), namely 32 respondents (59.3%), while respondents who have less knowledge about BSE as many as 12 people (22.2%) and who have enough knowledge about BSE as many as 10 respondents (18.5%). In addition, for breast self-examination behavior, most respondents did not perform it (35 respondents, 64.8%), while those who did were 19 respondents (35.2%).

Table 2. The Relationship of Knowledge to Breast Self-Examination Behavior

Knowledge	Behavior				Total		<i>p value</i>
	Not Performed		Performed		n	%	
	n	%	n	%			
Less	12	22,2	0	0	12	22,2	0,000
Enough	10	18,5	0	0	10	18,5	
Good	13	24,1	19	35,2	32	59,3	
Total					54	100,0	

Based on table 2 shows that 19 respondents (35.2%) with good knowledge of breast self-examination (BSE) perform BSE behavior, but 13 respondents (24.1%) with good knowledge do not perform BSE behavior, then 12 respondents (22.2%) with less knowledge and 10 respondents (18.5%) with enough knowledge about BSE do not perform BSE behavior.

The results of the chi-square test showed a significance value of $p < 0.001$ rather than $p = 0.000$, indicating that the hypothesis is accepted and that there is a relationship between knowledge and breast self-examination behavior among adolescent females at SMK Kesehatan Amanah Husada Yogyakarta.

DISCUSSION

Knowledge of Breast Self-Examination (BSE) by Female Students of SMK Kesehatan Amanah Husada Yogyakarta

Based on the results of the Univariate analysis, from 54 respondents, 32 respondents (59.3%) were found with good knowledge of breast self-examination (BSE), while respondents who have less knowledge about BSE as many as 12 people (22.2%), and respondents with enough knowledge of BSE were 10 respondents (18.5%). This is in accordance with the previous theory that knowledge is a continuation of individual curiosity regarding objects through the senses possessed. Each individual has different knowledge because everyone's perception of an object is different (Adiputra, 2021).

The theory (Irawan *et al.*, 2022) states that knowledge is the result of human sensing or the result of a person's knowledge of objects through the senses they have (eyes, nose, ears, and so on). By itself, at the time of sensing until the knowledge is produced, it is greatly influenced by the intensity of attention and perception of the object. Most of a person's knowledge is acquired through the senses of hearing (ears) and the senses of sight (eyes). Respondents who have enough knowledge or even less about breast self-examination (BSE) due to the lack of information related to this because what they get from the school is in the form of subjects about nursing and pharmacy. According to the school, counseling related to reproductive health, especially breast self-examination (BSE) has never been carried out at SMK Kesehatan Amanah Husada Yogyakarta, both from the school and from outside parties and according to respondents who have good knowledge about BSE, information related to this matter is obtained from the internet or social media.

The study found that the majority of female students at SMK Kesehatan Amanah Husada Yogyakarta already had a good understanding of the importance of breast self-examination (BSE). However, a low but sufficient level of knowledge can affect the low level of BSE behavior.

Behavior of Breast Self-Examination (BSE) by Female Students of SMK Kesehatan Amanah Husada Yogyakarta

Based on the results of the Univariate analysis among 54 respondents, for breast self-examination behavior (BSE), most respondents did not perform BSE (35, 64.8%), while 19 respondents (35.2%) did. This is in accordance with the previous theory that behavior is divided into two, namely, covert behavior and overt behavior (Rachmawati, 2019) Closed behavior occurs when the response from a stimulus cannot be clearly observed by others. The response is still limited to attention, feelings, perceptions, knowledge, and attitudes. Meanwhile, open behavior occurs when the response to a stimulus is observable to others. The response is clear in an action or practice.

The theory (Adventus *et al.*, 2019) states that measurements can be made in two ways, namely, direct and indirect. Direct measurement where the researcher directly observes or records the behavior of the subject being studied using a media checklist. Meanwhile, for indirect measurements, the researcher does not directly observe the subject's behavior and can use questionnaire methods. In this study, the researcher used an indirect measure by distributing questionnaires on knowledge and breast self-examination behavior for respondents to complete.

The study found that although the majority of young women at SMK Kesehatan Amanah Husada Yogyakarta have good knowledge of breast self-examination (BSE), many still do not practice BSE in their daily lives.

The Relationship between Knowledge and Breast Self-Examination (BSE) Behavior by Female Students of SMK Kesehatan Amanah Husada Yogyakarta

Based on the results of the bivariate analysis, from 54 respondents, 12 respondents (22.2%) with less knowledge and respondents with enough knowledge about breast self-examination (BSE) as many as 10 respondents (18.5%) did not perform BSE behavior, then respondents with good knowledge but did not perform BSE behavior as many as 13 respondents (24.1%) and respondents with good knowledge but performed BSE behavior as many as 19 respondents (35, 2%). This is in accordance with the previous theory that there are three factors that affect behavior, namely predisposing factors, which include knowledge, attitudes, beliefs, values and so on, enabling factors, which include the physical environment, the availability or absence of occupational safety facilities, such as support tools, training and so on, and reinforcing factors (reinforcement factor), which includes

laws, regulations, supervision and so on (Loppies & Nurrokhmah, 2021). According to the results obtained, respondents with less and sufficient knowledge did not support BSE behavior due to the influence of predisposing factors in the form of knowledge, while respondents with good knowledge but did not support BSE behavior explained that supporting BSE behavior is not only about having good knowledge, because there are still other factors besides knowledge.

This study is in line with the research conducted by (Dewi et al., 2021) It was found that although adolescent females have good knowledge of breast self-examination (BSE), there are still those who do not engage in BSE behavior. The research emphasizes the need to increase educational efforts to ensure that the knowledge gained can be applied in real action. In addition, this study is in line with research conducted by (Nasution et al., 2023) which shows that despite good knowledge, there are still poor BSE behaviors. The research emphasizes the importance of not only providing information but also motivating and creating an environment that supports behavior. Meanwhile, the research conducted by (Wahyuni & Suarni, 2024) This is also in line with this study, the results show that adolescent females with less knowledge have less BSE behavior. The research emphasizes the need to increase motivation and understanding of the importance of BSE awareness.

After a chi-square test, a p-value of 0.000 was obtained, indicating a relationship between knowledge and breast self-examination (BSE) behavior among adolescent females at SMK Kesehatan Amanah Husada Yogyakarta. This research is in line with the results of research conducted by (Dewi et al., 2021) which stated that there is a relationship between knowledge and early detection of breast cancer (BSE) at MAN 1 Sukabumi with a p value of 0.000. Likewise, the results of research by (Nasution et al., 2023) that there is a relationship between the knowledge variable and the behavioral variable of breast self-examination (BSE) at SMA N 1 Batang Angkola in 2022, with a p-value of 0.001. In addition, the results of (Wahyuni & Suarni, 2024) Research also found a significant relationship between knowledge and adolescent females' actions regarding BSE (Breast Self-Examination) at Ar-Rahman High School, with a p-value of 0.000.

CONCLUSION

Knowledge was positively and significantly associated with self-breast examination behavior at Amanah Husada Health Vocational School in Yogyakarta (p-value 0.000).

RECOMMENDATIONS

Schools and health workers need to educate adolescent females about the importance of breast self-examination (BSE) and incorporate it into regular school activities. Meanwhile, further research is needed to explore factors influencing adolescent females' awareness of breast self-examination for early detection of breast cancer.

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